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### The syntax of roots and the roots of syntax

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## REVIEWS

**The syntax of roots and the roots of syntax.** Ed. by ARTEMIS ALEXIADOU, HAGIT BORER, and FLORIAN SCHÄFER. (Oxford studies in theoretical linguistics 51.) Oxford: Oxford University Press, 2014. Pp. xiii, 333. ISBN 9780199665273. \$115 (Hb.)

Reviewed by ITAMAR KASTNER, *New York University*\*

A considerable amount of recent work in morphology has relied on the notion of a categoryless ‘root’. Under most approaches associated with this view, the root is the lexical core of the derivation. Such approaches have found it useful to posit this element because it allows the analyst to hypothesize different constraints for the root and for the rest of the syntax. This division of labor is the topic of *The syntax of roots and the roots of syntax*. Root-based approaches enable us to formulate different hypotheses about the kind of information contained in the root proper versus the information that must be part of the morphosyntactic derivation. For example, analyses of argument structure alternations implicate both the root and the functional structure that the root attaches to. Consider the verbs *clear* and *wipe*: if we can *clear the dishes from the table* and *clear the table of dishes*, why is it that we can *wipe the fingerprints from the counter* but cannot *\*wipe the counter of fingerprints* (Levin & Rappaport Hovav 1991)? Any answer to this question must engage with at least two aspects of these constructions: the lexical semantics of predicates like *wipe* and *clear* and the different syntactic structures they are embedded in. An appeal to roots provides the morphologist with a convenient way of making the distinction, with different distinctions leading to diverging predictions within and across languages.

This volume, edited by Alexiadou, Borer, and Schäfer, presents a collection of papers from two roots-oriented workshops held at the University of Southern California and the University of Stuttgart. The resulting collection is a morphologist’s feast; virtually every chapter makes for essential reading for researchers working on these issues. Other readers, however, might be overwhelmed by the range of analyses and phenomena. An uninitiated linguist interested in seeing what all the root-related fuss was about might not find this volume to be immediately accessible. Since the book contains many well-thought-out contributions, it is not possible to evaluate each and every one of them here. Instead, in what follows I recommend one way of approaching the volume, a way I believe will be the most helpful for someone not already well-versed in these issues. The path I sketch through the chapters and by which I recommend that they be read has two aims in mind: to demonstrate the empirical and conceptual benefits of using roots, and to build on this assumption by seeing in what ways the theories can be developed. Some readers may find it more useful to pick out individual chapters, and for these readers too I hope the following overview will be helpful.

Regardless of their background, all readers stand to benefit from perusing the introduction by the editors. They go over the issues sketched above in depth, outlining what is at stake and how the individual chapters further our understanding of existing debates. Ultimately, the order in which the contributions are surveyed here is very similar to that in the introduction, though I frame the narrative slightly differently.

We begin with three chapters presenting empirical issues that can be analyzed by embedding semantically contentful roots in syntactic structure. These chapters are followed by three others that strip away the semantics from the root. Two additional chapters then formalize how lexical semantics can be attributed to the root. Three more chapters highlight issues of locality, before the final chapter asks to what extent all of these issues can relate to other questions in contemporary syntactic theory.

\* I thank Maria Gouskova and Tricia Irwin for comments on a previous draft.

Kicking off with a few empirical puzzles, ARTEMIS ALEXIADOU's contribution addresses the question of what affixes combine with what roots. Specifically, the Greek prefix *afto* can derive reflexive verbs, but only for roots that denote actions performed on others, and then only with an additional nonactive suffix. Meanwhile, EDIT DORON's contribution discusses passive participles in the nonconcatenative morphology of Modern Hebrew: in one of the verbal templates of Hebrew, a passive participle must be interpreted as having an external argument. In another template, the participle implicates an event that could have been either internally or externally triggered. Both authors argue for a decompositional account of the verb, building on ontologies of root classes and functional heads to describe which roots can combine with which heads. Alexiadou's system requires a distinction between self-directed and other-directed predicates, in combination with a medio-passive Voice head. Doron's system requires a distinction between state and event predicates, in combination with a number of functional heads. One of these heads has causal entailments that can be found elsewhere in the language as well. In both chapters, when these pieces are put together in their respective languages, all and only the attested kinds of readings arise. Alexiadou and Doron thus motivate the root as a useful theoretical construct while providing an explicit proposal for what syntactic elements different roots combine with.

Similar in spirit if not in execution is MALKA RAPPAPORT HOVAV's contribution, which makes the case that different roots lexicalize events in different ways. Rappaport Hovav shows that change-of-state verbs like *lengthen* exhibit similar behavior to verbs of directed motion like *reach*, arguing that both kinds lexicalize change along a scale. As such, these verbs bring about 'result' readings. Roots that do not lexicalize scalar change form verbs like *roll*, which derive 'manner' verbs rather than directed-motion verbs. This difference between roots gives rise to the so-called manner/result complementarity: a verb does not lexicalize both an end state and a manner (Rappaport Hovav & Levin 2010).

Other contributions withhold semantics from the root, relying instead on the syntactic structure to dictate aspects of meaning. VÍCTOR ACEDO-MATELLÁN and JAUME MATEU argue that the manner/result complementarity is epiphenomenal to interpretation of structure. They show that roots can be embedded in different kinds of syntactic configurations, leading to manner or result readings based entirely on the syntax. Since the structure is what entails the right reading, there is no reason for the root to restrict meaning as well.

HAGIT BORER's contribution operates under a similar set of assumptions. Her system makes do without any specified lexical semantics on the root, using roots as phonological packets with indices to semantic interpretation in different structural contexts; meaning can only be assigned to a structure containing a root and additional material. Borer devotes most of her discussion to zero-affixation, arguing that it is too powerful a device for morphology to employ. In her theory there are no zero-affixes, not even as categorizers, with implications for how roots are interpreted as nominal-like or verbal-like.

PAOLO ACQUAVIVA adopts a similar view of roots as contentless. Whereas many of his fellow contributors discuss verbs and deverbal elements, Acquaviva's discussion focuses on nouns. His chapter develops the idea that roots are acategorical but still inherently nominal, with detailed discussion of what this hypothesis means for the crosslinguistic inventory of nominal forms.

One way to contrast hypotheses about the semantic content of roots is by formulating a detailed compositional semantics of derivations, as in the following two chapters. LISA LEVINSON proposes an ontology of roots that assigns different semantic types to different classes of roots. Her analysis derives a number of syntactic generalizations from constraints on semantic well-formedness. For example, 'root creation verbs' like *slice* are built from a root of type  $\langle e, \triangleright \rangle$ , and it is this property that renders them incompatible with double object constructions that involve transfer of possession.

Along similar lines, ANTJE ROßDEUTSCHER presents an analysis in discourse representation structure of certain constructions in German, including the dative alternation. Roßdeutscher treats roots as predicates that require arguments of different kinds. When there is a mismatch between the type of the root and the structure it is embedded in, a specific kind of 'unexpected' reading

arises that is grammatically constrained through processes of coercion as defined in Roßdeutscher's system.

The next three chapters focus on locality constraints that govern the interaction between root-centric structures and the rest of the grammar. JEAN LOWENSTAMM's contribution shifts the focus to locality considerations in phonology (a domain otherwise neglected in this volume). Lowenstamm discusses stress shift in English as it might be analyzed in distributed morphology, and argues that the framework as it stands is too restrictive to correctly derive the phonological patterns across cyclic domains. Instead, he proposes that certain affixes might themselves be roots rather than cyclic heads, thus capturing syntactico-selectional and phonological generalizations at the same time.

ELENA ANAGNOSTOPOULOU and YOTA SAMIOTI provide a detailed analysis of deverbal adjectival and participial forms in Greek. Anagnostopoulou and Samioti demonstrate that forms using the *-tos* suffix exhibit patterns of interpretation that are surprising if composition is strictly local. The authors employ a distinction between kinds of roots to argue that categorization should be dissociated from eventivity. That is, the little *v* head cannot serve both purposes and is instead split into two heads, one categorizing and one eventivizing. The Voice head introduces external arguments and is the upper bound for idiomatic interpretation. Like the previous chapter, this one combines an empirical issue of locality with a technical solution that has theoretical consequences.

In the last study of locality, MARIJKE DE BELDER, NOAM FAUST, and NICOLA LAMPITELLI survey diminutive forms in a number of languages. The authors argue that a diminutive morpheme may attach 'high' (above the nominalizing head) or 'low' (directly above the root). When the diminutive attaches high, the interpretation is compositional, but special meanings are available if the diminutive attaches low and is then categorized.

Finally, with these issues in mind, ÁNGEL J. GALLEGO provides a comparison of phasehood in distributed morphology with phasehood in minimalist syntax (Chomsky 2008). The comparison not only is instructive in general but also claims that the reason nouns cannot take arguments lies with the nature of phasehood: a phase head like little *n* does not have unvalued phi-features that are inherited by the rest of its phase. Little *v* does need to value phi-features, and so verbs can take arguments while nouns cannot. This contribution constitutes a fitting conclusion to the reading order suggested here; Gallego's work combines overarching syntactic issues with a proposal for how a root-based account might inform them, and vice versa.

As a whole, the volume contains many interesting ideas that speak to current research in the field. Unfortunately, having different authors and viewpoints also means that each chapter brings in a different set of assumptions. For example, Lowenstamm's contribution relies on a certain view of where in the grammar phonological processes can apply, a view not necessarily shared by all morphologists. This is not a critique of that individual chapter; rather, the reader simply should be aware that just as there is no one definition of a root, so too the different authors may differ in their assumptions. Since the purpose of the volume is to bring together representative research in allied frameworks, I believe that this variation in frameworks is a small price to pay. Good cross-referencing within the volume also helps the reader keep track of which chapters make similar points and which present opposing views.

In sum, this volume provides a valuable resource to those working on root-related issues, pooling together a range of insightful proposals and intriguing data. The introduction in particular offers a clear discussion of how general themes crosscut the different chapters. Importantly, the volume is by no means only for those 'in the know'. It can serve as an excellent advanced introduction to contemporary thinking on lexical semantics and morphology, and the kinds of interactions they exhibit with syntax and semantics.

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RAPPAPORT HOVAV, MALKA, and BETH LEVIN. 2010. Reflections on manner/result complementarity. *Syntax, lexical semantics, and event structure*, ed. by Edit Doron, Malka Rappaport Hovav, and Ivy Sichel, 21–38. Oxford: Oxford University Press.

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**Diagnosing syntax.** Ed. by LISA LAI-SHEN CHENG and NORBERT CORVER. Oxford: Oxford University Press, 2013. Pp. 624. ISBN 9780199602506. \$71.

Reviewed by ANDERS HOLMBERG, *Newcastle University*

This is a book about an aspect of the methodology of syntactic research, namely the use of diagnostics to establish a particular analysis or derivation, as when the linear order of a verb preceding a sentence adverb is taken as a diagnostic of verb movement.

This is an unusual topic for a book. Over the years, a methodology has evolved for syntactic research that is taught in university courses and is practiced all the time by everyone involved in syntactic research. It is described in textbooks, although hardly ever as a topic as such. Instead, the methods used in syntactic analysis and theory are taught by demonstration. One reason why methodology is not taught as a topic as such in textbooks is that the typical textbook teaches the substance of syntax as well as the methods for investigating it, the substance being the ‘facts’, the observations and generalizations that the theory tries to explain. It is convenient, and probably pedagogically sound, to teach the facts and the methods for describing and explaining them together.

*Diagnosing syntax* does that as well, to some extent. Some chapters remain purely pedagogical, reviewing and discussing the diagnostics that have been employed in the literature for a particular analysis or derivation. Other chapters supplement the review with new diagnostics, or new arguments, for a particular analysis or derivation or theoretical stance. In some chapters it is less obvious how they relate to the diagnosis theme; they present a set of arguments for a particular idea without special reference to the notion of diagnosis as such. But as noted in the introductory chapter, there is no clear borderline between argument and diagnostic. The relation between the two concepts is cleverly captured by David Pesetsky, one of the contributors, as being a matter of confidence. When we are confident enough that an argument is sound, it may be promoted to a diagnostic. Most of the chapters in *Diagnosing syntax* do, indeed, review and discuss arguments that have been tried and tested over the years, to the point where many of us are quite happy to refer to them as diagnostics.

*Diagnosing syntax* is not a textbook. It is aimed at students or scholars who already have a solid enough background in syntax. The editors have made a great effort, though, to produce a coherent volume that really addresses the issue of diagnosis in syntax. The book consists of five parts on head movement, phrasal movement, agreement, anaphora, and ellipsis, plus an introduction by the editors. Each part consists of a set of chapters, by different authors, discussing issues in relation to the topic of the section, followed by a conclusions chapter written by one of the authors, or cowritten by two authors, of the individual chapters. Most of the conclusions chapters include comments on the preceding chapters, presenting a synthesis where this seems reasonable, and noting controversial issues that remain unresolved. In one or two of the sections the conclusions chapter could have been more useful as an introduction to the section.

The book starts out with an introduction by the editors, Lisa Cheng and Norbert Corver, presenting and discussing the topic of the book, and in particular the concept of diagnosis as it is used, or ought to be used, in syntactic research. The first chapter in the section on head movement is by CHRISTER PLATZACK, who reviews the properties that are taken to be characteristic of head movement as opposed to phrasal movement and goes on to argue, on the basis of evidence from